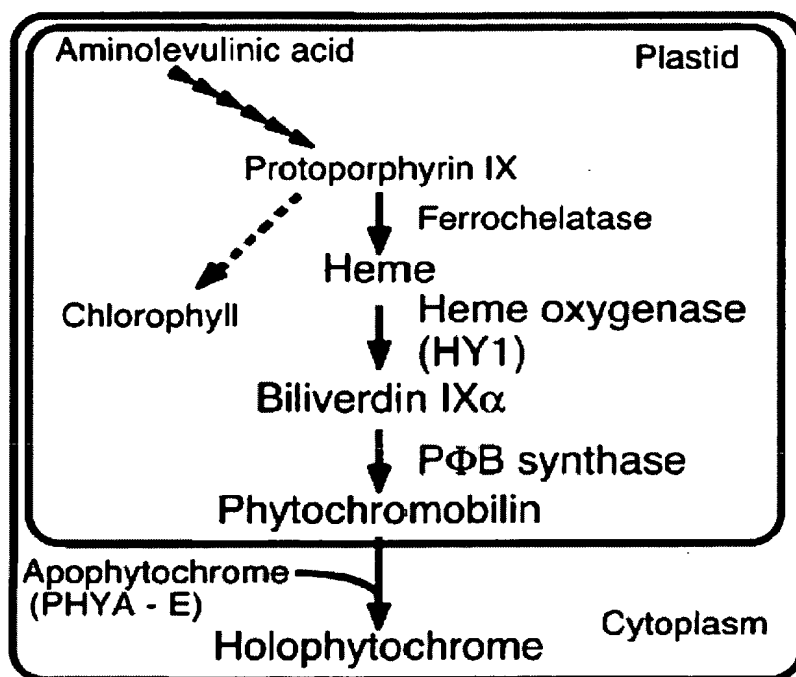
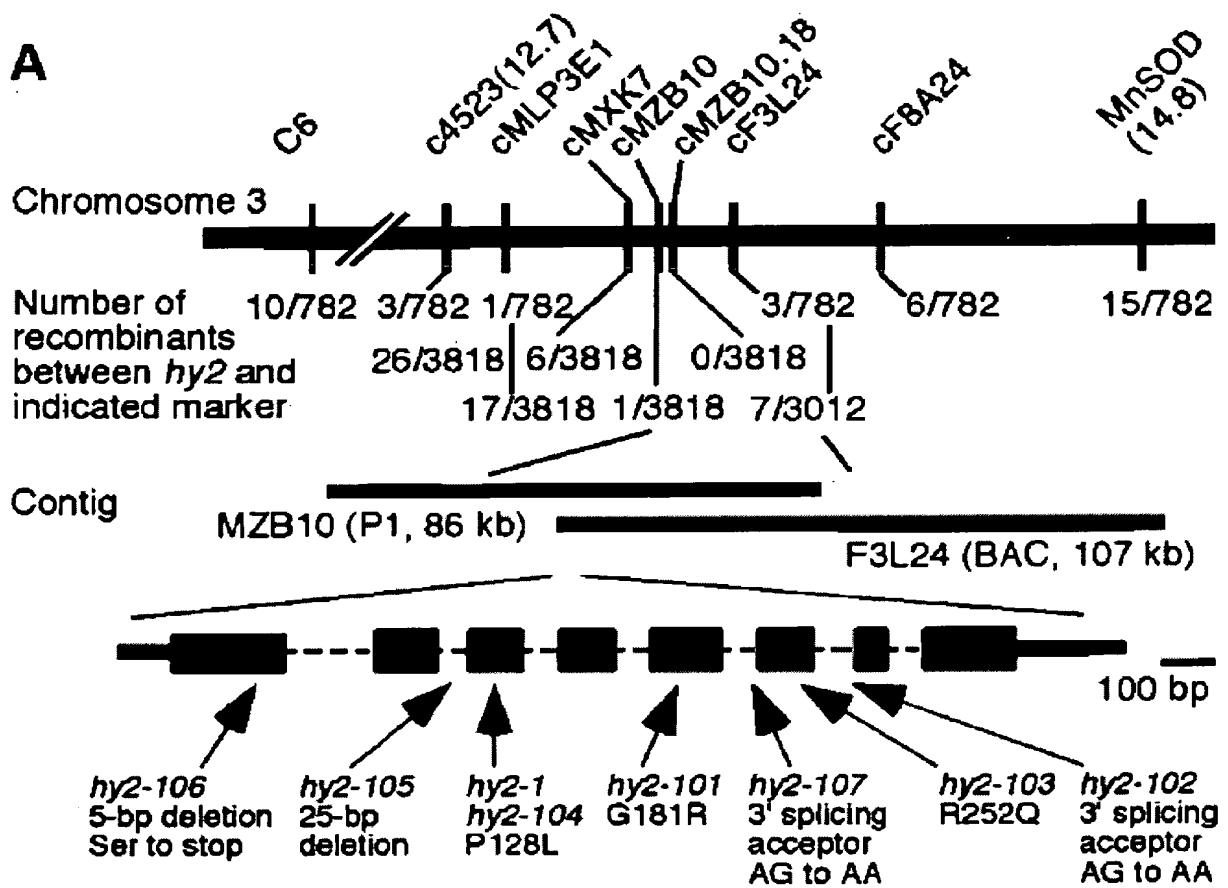


**Fig. 1**



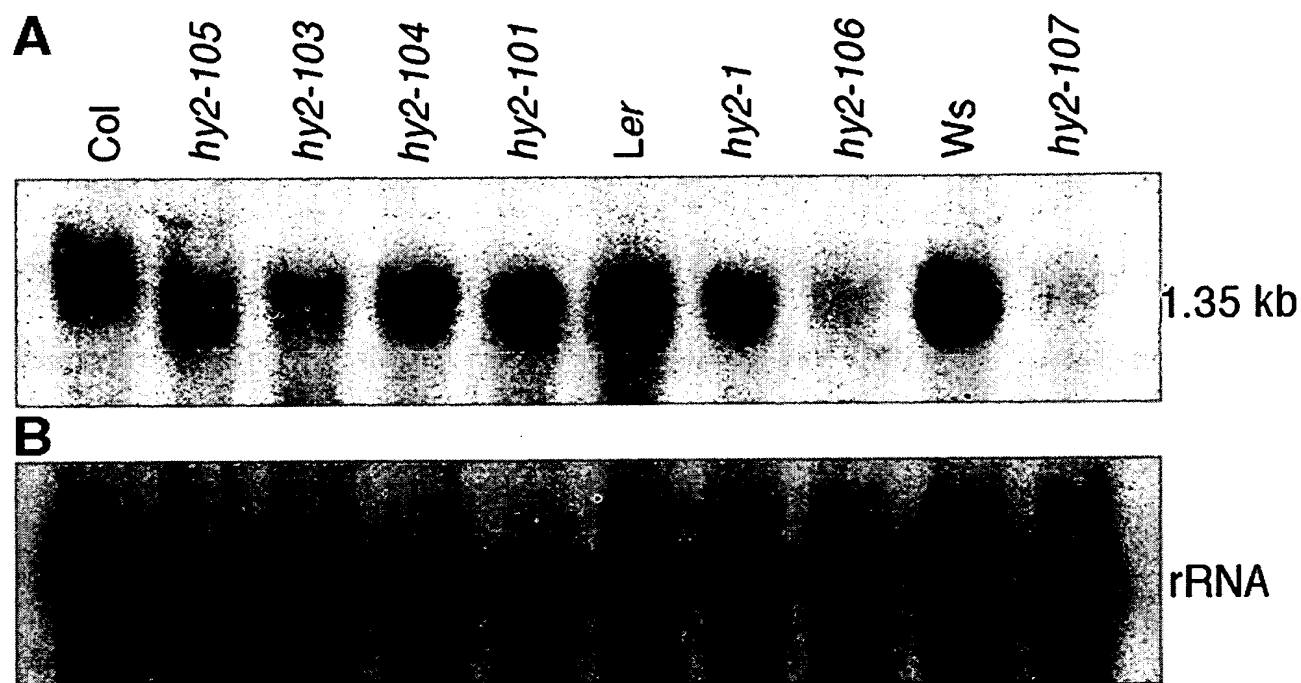
**Fig. 2**



**Fig. 3A**

gaattccccacgtcaacgtgaactgtgcattccacgtggggatgtgggocctatagttgy 60  
 accatgactcggacggatgttgaattcattgtcgttgccaattgcgtttgtctcactga 120  
 aactgtgaaattttatctcttttatagataaaAGAAATCTGCTTTTTCAGTTTTCAGTA 180  
 TGAAGAAGAATTGAAGAGAGTGTCCGAGGAAGGAGACCTTTGGTTTCAGTTTGTGAGTCT 240  
 TGTGTGAATGGCTTTATCAATGGAGTTTGGGTTTTCAAATTGGGTTCATGCTTCAAGGCACC 300  
 M A L S M E F G F S I G S C F K A P  
 AAACCCACCTGTTCTAATCTCTGCAAGCCCTAATAAGATCAATTTCACGTTGAGAAGGAG 360  
 N P P V L I S A S P N K I N P T L R R R  
 AAAGAAAAGATTCTTACTTAGAGTCTCTGCTGTGTCTATAAGGAATTCCGAGAGTCTGC 420  
 hy2-106 \*\*\*\*\*  
 K K R F L L R V S A V S Y K E F A E S A  
 TTTAGAAGAAACCAGGAAAAGGATCGTTCTTGAACCTTCACATCTCCAGgtatatgcaat 480  
 L E E T R K R I V L E P S H L Q  
 tacatttgcgttagtgtgtggaggattatatttctcattgtttctgtgtgaattttg 540  
 ggttaattgatttgcgttagtgcatttaggaaccaacaataaactttaactgttatagactgc 600  
 ttatataagtaaaagtccagattttgtttttctaatcacgaactgtttcagGAAAAGTA 660  
 E K Y  
 TAGTAGCATGACAGGACTAGATGGTAAGACCGAACTTCAAATGCTTGCTTTTAAATCTTC 720  
 S S M T G L D G K T E L Q M L A F K S S  
 AAAGATTAGACTCTTGAAGGATGAGCAATAGAGAATGAGACAATGCAGgttttaacttca 780  
 K I R L L R S M A I E N E T M Q  
 gcagtaaaactgatttgcgttagtccccatttcccttaacttcaattgattgattgtttgta 840  
 hy2-105 \*\*\*\*\*  
 tcttcgcttagGTCTTTGACTTTGCGGGTTTCATGGAGCCTGAGTATGATACTCCCATAT 900  
 hy2-1,hy2-104 T  
 V F D F A G F H E P E Y D T P I F  
 TCTGTGCTAACTTTTTCACATCTACCAACGTTAACATAGTTGTATTgtaagttatcttct 960  
 C A N F F T S T N V M I V V L  
 agttatgctggagttatcaggtctgtattgtccaaactgatgttcaatattttactgtat 1020  
 gttcttctcttagGGACCTTAATCCTTTGCATCAGTTGACTGACGAGACGATTACCAAGA 1080  
 D L N P L H Q L T D Q T D Y Q D  
 CAAGTATTATAACAAGATAATGTCCATATATCACAAATATGCTGAGgtgaccacaagaat 1140  
 K Y Y N K I M S I Y E K Y A E  
 acaccaaattactcaattgcaagtaaacctaatgtgaggtgtaatgactgatcttgag 1200  
 atttatttgcagACTTCCCATGGGGAGGAAATTGACTGGTGAATCCATAAAGTTTTTC 1260  
 hy2-101 A  
 T F P W G G K L T G E S I K F F  
 TCGCCTTTGGTGATGTGGACTAGGTTTTCGTCTAGCAAAGAAAAACATAAGGCTTTGTTC 1320  
 S P L V M W T R F S S S K E K H K A L F  
 TCTGCGTTTCTAGAGTACTATCAGgtatataactcagcggccaaaagctaaggtttttattg 1380  
 S A F L E Y Y Q  
 gaaactttgactgagaatctatcatcttcttctacagGCATGGCTTGAGATGACAATCC 1440  
 hy2-107 a  
 A W L E M T I Q  
 AAGTGAGGGAGGAGATGGAACCATCTCATGTGAGAGCCAAATTGTGAAGCACAACACAAGT 1500  
 V R E E M E P S H V R A N C E A Q H K Y  
 ACCTGACATGGCGAGCACAAAAGgtgatttccatttcttttgtgtaatttgcattgtttga 1560  
 hy2-103 A  
 L T W R A Q K  
 acagacactgtatctgtattgttacaatggatattgatttgggtgtttgcagGATCCTGGA 1620  
 hy2-102 a  
 D P G  
 CATGGTCTTCTTAAAGATTAGTAGGTGAAGCAAAGGCAAAGgtataaaagatttgcattcc 1680  
 H G L L K R L V G E A K A K  
 cattagtgctccccatttattagcttgtgnaagatgttgaaaatgatttgaacaaaatc 1740  
 agGAGCTGTCTAAGGGATTTCCTGTTCATGCGGGTGGATGAGTTAGGCACAAAAACATTCA 1800  
 E L L R D F L F N G V D E L G T K T F I  
 TTGATTACTTTCCAGAGTACCAACAGAGATGGAACGTGAAGCGATAAACGAAGTATCA 1860  
 D Y F P E Y Q T E D G T V S D K R S I I  
 TTGGGAAGTCATATGAAACTCGTCCATGGGATTTAACAGGACAATTTATCGGCTAACAAAT 1920  
 G K S Y E T R P W D L T G Q F I G  
 GATATATGTGAACAAGTCAGATTTTCAGAGTCATCAACACAAGAGGACGTGAACCTAGGGA 1980  
 AGTAGGAATAAGAAAGAGCAGCATGAGGAGTCTCTCAGGTCTATCTGCATTTCAGATGA 2040  
 TTGTTTGAGTTACCATGCATTGTAGTTTACAAAGTGTAGTCTCAGCCCTTCATCAAAAT 2100  
 GAGAATCCTCGAGTATGATATGATTTTAAATGAAAATGTATTTCGTCTTacttaactcaaca 2160

**Fig. 3B**



**Fig. 4A and Fig. 4B**

```

      20      40      60      80
HY2_ARA1H : MALSHWFCFSIGSCPEAPKPEVLEBASFNKINFTLBRKKKPTLIRVSEAVEYKEFAESALEETRYRIVLESEHQEKYSSNICLDCK : 86
YCP2_SYNPY : -----NFEHFWLKLKNDITYK-----GSKGLSPKGLKKCRKKK : 86
YHP2_FECMA : -----DKALMLQDLSEHLKKI-18KSKMINKENGRKKKPTKKQD : 40
YHP2_FECMA : -----MIIRDYSLSKEDLRWINTPPFMDLVOKL-3VPEIBSYESSECFISKISITGSR : 54
YCP2_SYNPY : -----MTQRFKSTDPYMLIGWSTWPP7LEDALKEI-2GLEVESTPPDRFLQRIHQIGSR : 54
SLR016 : -----MAVIDLELTN6SLMFTLWMIQQLA1A5A6M-QSLPKKQVPEGLCYVICRLECE : 56
      P 6

      100      120      140      160
HY2_ARA1H : -----TELENTAKKSKKI-EPKMAKKN-KTLOVTFPAGFNKPTVOTPIFCANFFYTSCHV--VUUGCHP-HQ1TCTBYQDK : 100
YCP2_SYNPY : -----GVGSDWMLDVVGVVDMVVDLACUSLOVWGCAYDLYNEDDLENGVDEINVCAROKLVAVLVSCDVOV--DKUFLDK : 115
YHP2_FECMA : -----CVKSMMLMDVGGVKKMVDKREACUREVLESWAYDAYDNRILIDEDNFELEKKLVAVLVSQVVOV--KKKIFCCK : 119
YHP2_FECMA : RNPVHT777LWAAKPKNTDOVSLACFKGGRSGVFKLIDINDVDLFFGANTYTPHG--HILALGSCAKKL-SMTNTXV : 137
YCP2_SYNPY : SKGIDVVDATWACKTERKPDQVLAACGACGASVLEFWINXGQVGLDFECCLVFWAG--HILALGSCAKKL-SMTNTXV : 137
SLR016 : -K--LVENRCYQIQPDKMHESLAKVCKGMDLHCUMFGRDLYGLDFECCLVACGCC-VSAATADGHTQS--DRQLPLAYK : 138
      d r g s p y p g l t p

      180      200      220      240      260
HY2_ARA1H : KFM-----SYHFKIAKIFNKGKLGKSIATFPLVMPTR-----FSSKKKKKKAIFSAFLEHYQALCEMTIQVREKMFPMVRANCBA : 244
YCP2_SYNPY : GOK-----SLNQKSPDLNGESTMRSIDPNQMPSEKLLKCR-----CGAEQATLSPTAFSAITDANWDHNDNAKSEPSGIPPEVEKHL : 193
YHP2_FECMA : DQO-----LKKKRSVDFFSKIMKIIDSNANPSKVLITY-----GSPEDLQCSMAHILDSPTAHYQVNDWNSREYIXIIFSKVEHL : 197
YHP2_FECMA : KLI-----VINDHLOLLPCCGKIKAKKFAVYKGVVMSVPLKSTCHIISEILKPAAGGKPLGILGKLIAMKPLKAK-ALKIL : 219
YCP2_SYNPY : RPI-----PPEFERLREGLRYGCPITPBACTFEPKCFITPBLDCEEGDELIOGIDRPAFWNDLLELJAGABRPTEER-SEVEL : 219
SLR016 : SAEVGQPEPFRQORELPPE-----LTPSKYCKGID-----FSKUTEELKRT7QGVVDLQTRCHQSTIVSEPLSLAQ-TLENH : 208
      E yk s r 51

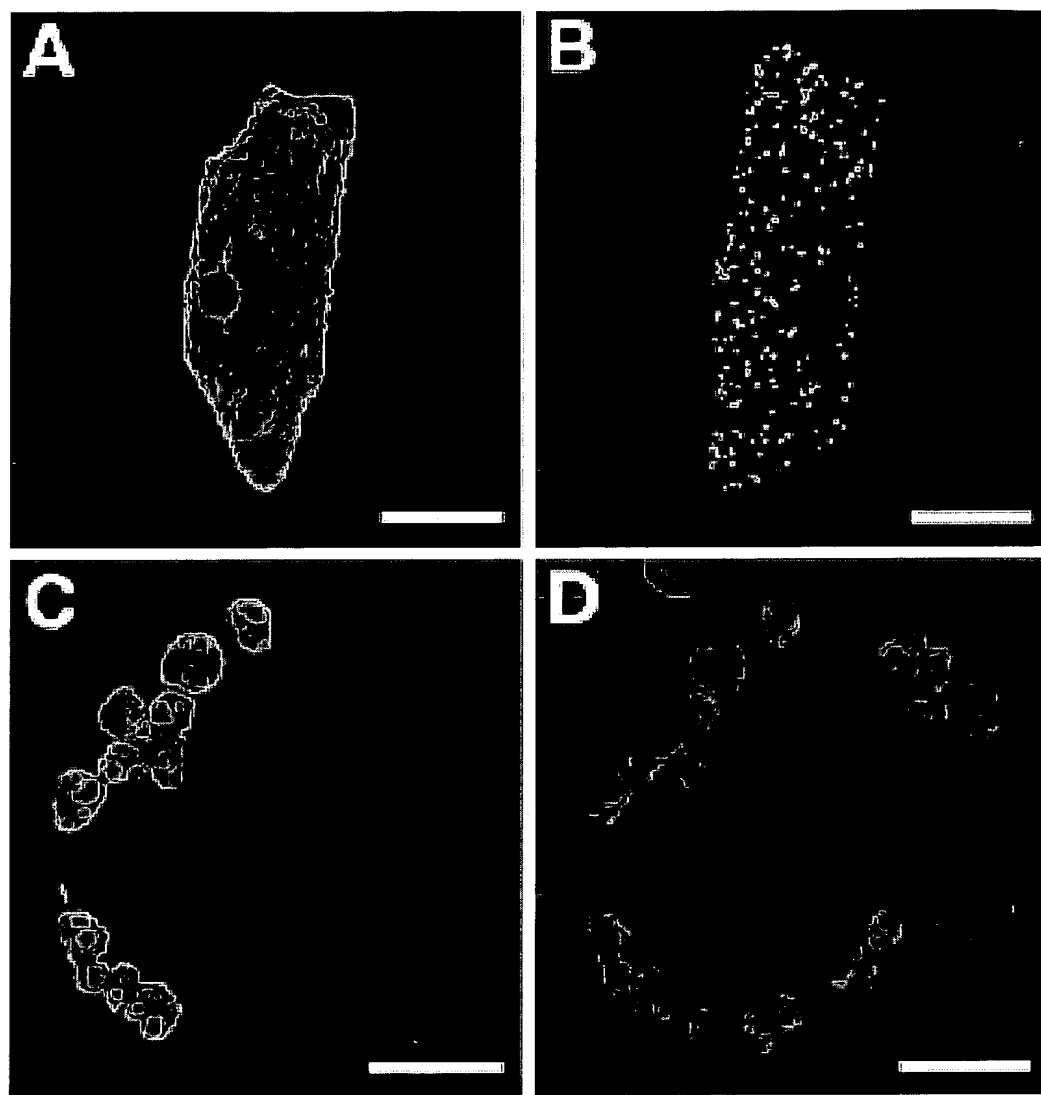
      280      300      320      340
HY2_ARA1H : QHKGILVRAQDQYGGGGLARLYFAAKKELRDVLDGVDELQKTFIDYVPEYQVVDGTYQDRAKSLICKKSYKTRFWOLTQGPIC : 329
YCP2_SYNPY : LKKKDISSAKSDPARGGPTSEFYADSSKREHRELPASSSHK----- : 235
YHP2_FECMA : HIKMDLSSAKSDPARGGPKSYFQCADQVRKLPFESHVAD----- : 241
YHP2_FECMA : KKAQIMRSTADADAMLCRSYKZETEDYHKKVEMI----- : 257
YCP2_SYNPY : KKKZDRABKDEARQMLTRENSETEAHTHTVLDL----- : 257
SLR016 : KIMCQQQCKKXTKRLKRNZKAKKMSQVLDVTD----- : 248
      s y Dp s G y E L

```

Fig. 5

20250-50402

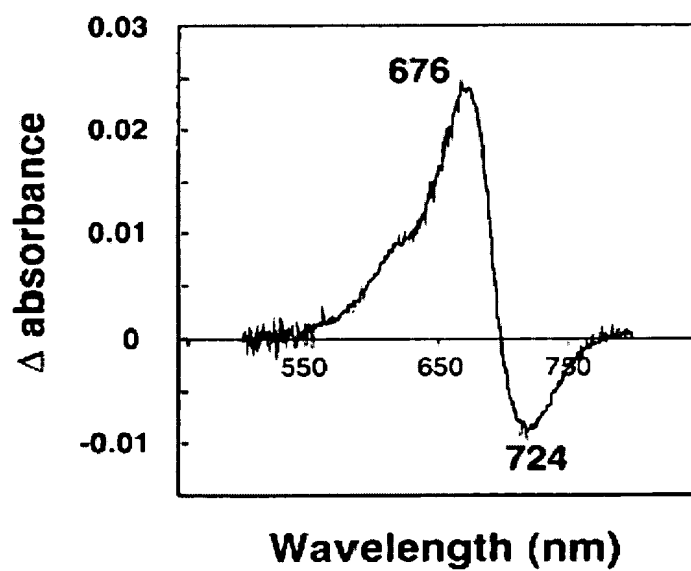
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0520405-052001



**Fig. 6A - 6D**

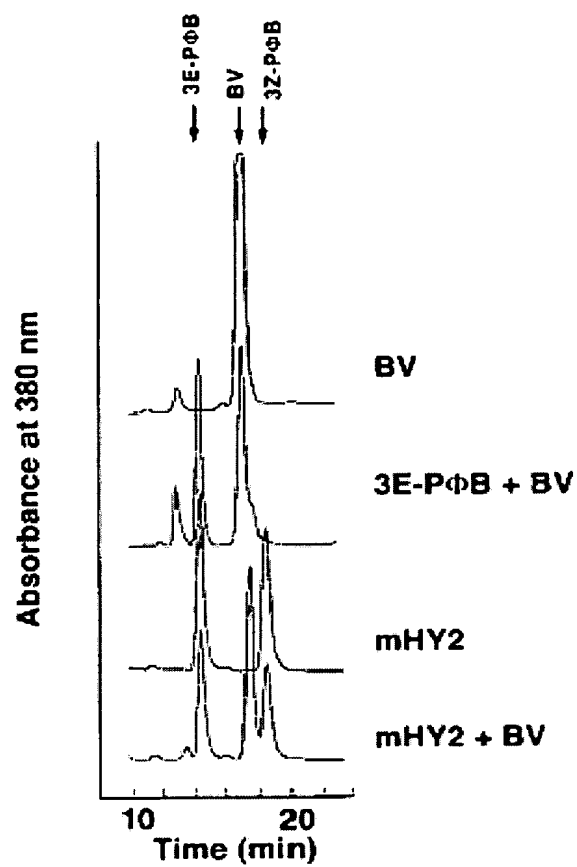


**Fig. 7**



**Fig. 8**





**Fig. 9**

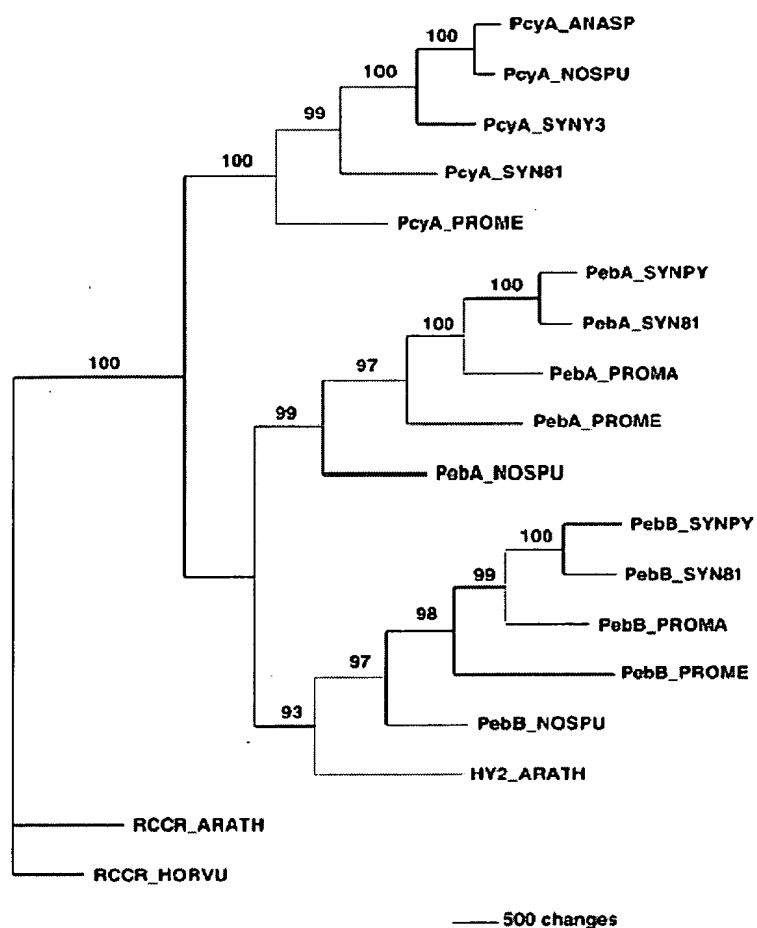
PCYA_ANASP	*	20	*	40	*	60	*	80	*	43
PCYA_NOSPU	---	---	---	---	---	---	---	---	---	43
PCYA_SYN3	---	---	---	---	---	---	---	---	---	46
PCYA_SYN81	---	---	---	---	---	---	---	---	---	42
PCYA_PROMA	---	---	---	---	---	---	---	---	---	44
PCYA_SYNPY	---	---	---	---	---	---	---	---	---	27
PCYA_SYN81	---	---	---	---	---	---	---	---	---	27
PCYA_PROMA	---	---	---	---	---	---	---	---	---	31
PCYA_PROMA	---	---	---	---	---	---	---	---	---	25
PCYA_NOSPU	---	---	---	---	---	---	---	---	---	64
PCYA_SYNPY	---	---	---	---	---	---	---	---	---	44
PCYA_SYN81	---	---	---	---	---	---	---	---	---	45
PCYA_PROMA	---	---	---	---	---	---	---	---	---	44
PCYA_PROMA	---	---	---	---	---	---	---	---	---	37
PCYA_NOSPU	---	---	---	---	---	---	---	---	---	40
HY2_ARATH	---	---	---	---	---	---	---	---	---	77
RCCR_ARATH	---	---	---	---	---	---	---	---	---	90
RCCR_HORVU	---	---	---	---	---	---	---	---	---	4
PCYA_ANASP	*	100	*	120	*	140	*	160	*	180
PCYA_NOSPU	---	---	---	---	---	---	---	---	---	126
PCYA_SYN3	---	---	---	---	---	---	---	---	---	126
PCYA_SYN81	---	---	---	---	---	---	---	---	---	129
PCYA_PROMA	---	---	---	---	---	---	---	---	---	123
PCYA_SYNPY	---	---	---	---	---	---	---	---	---	127
PCYA_SYN81	---	---	---	---	---	---	---	---	---	109
PCYA_PROMA	---	---	---	---	---	---	---	---	---	109
PCYA_PROMA	---	---	---	---	---	---	---	---	---	113
PCYA_NOSPU	---	---	---	---	---	---	---	---	---	109
PCYA_SYNPY	---	---	---	---	---	---	---	---	---	147
PCYA_SYN81	---	---	---	---	---	---	---	---	---	131
PCYA_PROMA	---	---	---	---	---	---	---	---	---	132
PCYA_PROMA	---	---	---	---	---	---	---	---	---	131
PCYA_NOSPU	---	---	---	---	---	---	---	---	---	127
HY2_ARATH	---	---	---	---	---	---	---	---	---	124
RCCR_ARATH	---	---	---	---	---	---	---	---	---	159
RCCR_HORVU	---	---	---	---	---	---	---	---	---	181
PCYA_ANASP	*	100	*	120	*	140	*	160	*	180
PCYA_NOSPU	---	---	---	---	---	---	---	---	---	126
PCYA_SYN3	---	---	---	---	---	---	---	---	---	126
PCYA_SYN81	---	---	---	---	---	---	---	---	---	129
PCYA_PROMA	---	---	---	---	---	---	---	---	---	123
PCYA_SYNPY	---	---	---	---	---	---	---	---	---	127
PCYA_SYN81	---	---	---	---	---	---	---	---	---	109
PCYA_PROMA	---	---	---	---	---	---	---	---	---	109
PCYA_PROMA	---	---	---	---	---	---	---	---	---	113
PCYA_NOSPU	---	---	---	---	---	---	---	---	---	109
PCYA_SYNPY	---	---	---	---	---	---	---	---	---	147
PCYA_SYN81	---	---	---	---	---	---	---	---	---	131
PCYA_PROMA	---	---	---	---	---	---	---	---	---	132
PCYA_PROMA	---	---	---	---	---	---	---	---	---	131
PCYA_NOSPU	---	---	---	---	---	---	---	---	---	127
HY2_ARATH	---	---	---	---	---	---	---	---	---	124
RCCR_ARATH	---	---	---	---	---	---	---	---	---	159
RCCR_HORVU	---	---	---	---	---	---	---	---	---	181

Fig. 10

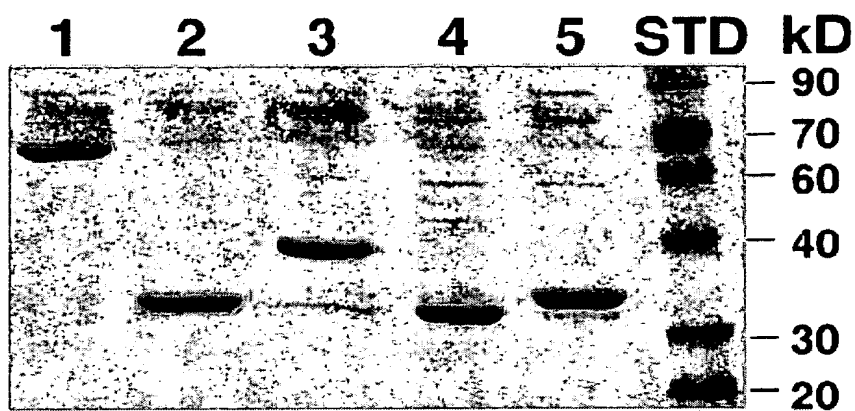
[illegible]

	280	*	300	*	320	*	340	*	360
PcYA_ANASP	QQILA-GCHNYCSKQQQN	DKTRRVLEKA	FGVDWAENMMTVLFLP	LE	---	---	---	---	245
PcYA_NOSPU	TONLA-GCHNYCTKQQQN	DKTRRVLEKA	FGPVMAENMMTVLFLD	LT	---	---	---	---	245
PcYA_SYNY3	LEHRQ-GCHNYCQQQQN	DKTRRVLEKA	FGBAWAEKMSQVLFQV	IQ	---	---	---	---	248
PcYA_SYN81	IRRYE-GLSYCLQQKRN	DKTRRVLEKA	FDASWADRMEELFFDPL	PPG	---	---	---	---	247
PcYA_PROME	IEERINYKKNYCVQMQNE	KTSLVLLKVPDKVMV	DEYIKNLLPFD	---	---	---	---	---	243
Peba_SYNPY	PEEBKNLQDKYDIYSAER	PAHGGLFTSH	FGKDMNRETHHEFLP	ASSHK	---	---	---	---	236
Peba_SYN81	PGDVERLLQNAVYNSAER	PAHGLFTSH	FGKEMSDRETHHEFLP	ASQPA	---	---	---	---	235
Peba_PROMA	PSKVEQLHINYDIYSAER	PAHGLFKSYFGOT	WADQEVREFLFPHSL	TAD	---	---	---	---	241
Peba_PROME	LEQIKNNCIDYKYSAEKD	PADKLFKTFRGET	MTNENINNFLFTLN	HNPLK	---	---	---	---	236
Peba_NOSPU	IQRIVKACKDYQVSADRD	PASGLFSSYFGHEWAE	ELHEFLFEDAVPLAV	SASKR	---	---	---	---	280
Pebb_SYNPY	EVLLO-GGRKYTDYRAEKD	PARGMTFRPHGSEMT	EALHTVLFDL	---	---	---	---	---	257
Pebb_SYN81	ELLLS-GGRKYTAARA EKD	PARGMTFRPYGSEMT	ESMIGVLFPLEDA	A	---	---	---	---	262
Pebb_PROMA	LKILE-GOKAYINRSTKD	PARAMELCRPYKEMTE	MLHKLFN1	---	---	---	---	---	257
Pebb_PROME	QELIN-GONDYLNIRRDND	PARPMSSSLFGKDE	TESLINNLFSTNKVL	---	---	---	---	---	257
Pebb_NOSPU	LVAIKQACLRLRYRAEKD	PARGMFKRPFYGAEMTE	BEVMIHGFLPOLER	KLTVVK	---	---	---	---	255
HY2_ARATH	VRANCEACHKYLTRAQCK	PGHGLDKRLVGEAKA	LELDRFLFNGVDELGT	KTFIDY	FPEYQT	EDGTVSDKRS	IGKSYETRP	WDLTGQFIG	329
RCCR_ARATH	ERMELERDKSFRKSI	IEDDLDLQF	PPMFGEEVSVSRVWHA	KEAFGL	---	---	---	---	319
RCCR_HORVU	EREIMVKRDR	TVRSKS	IEVDLTAN	PEMFGPD	VSGRIIAELERKA	FGVQEG	---	---	205

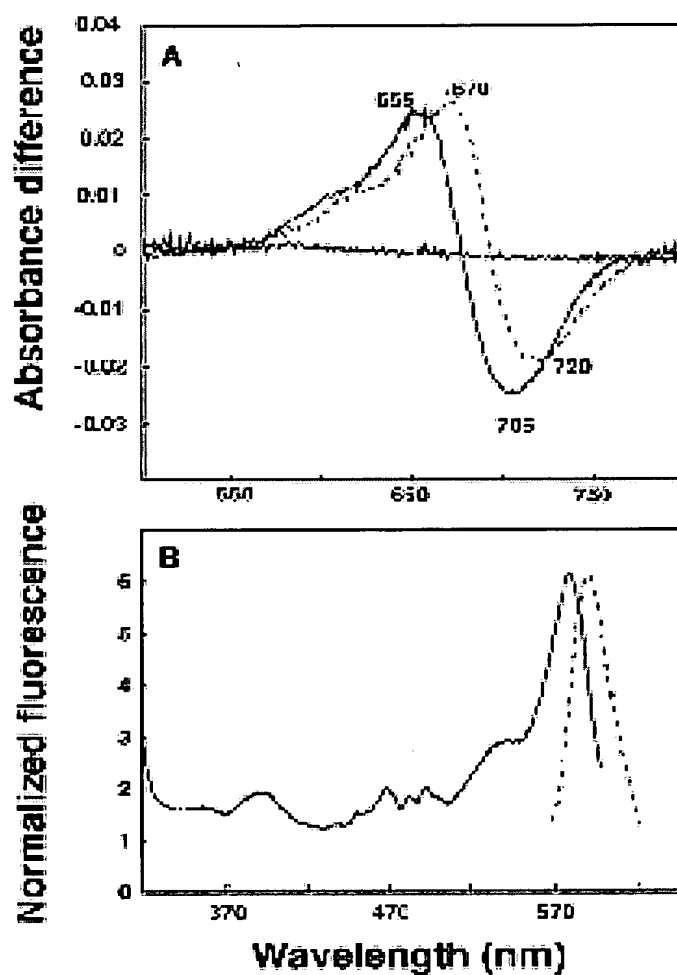
**Fig. 10 cont'd**



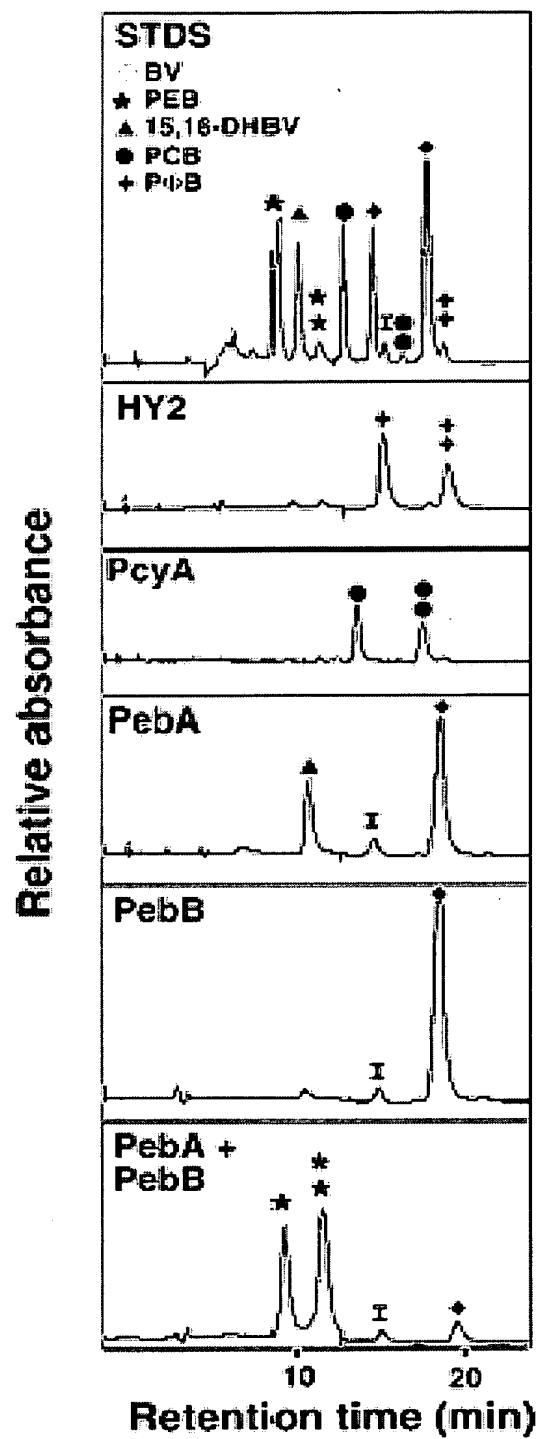
**Fig. 11**



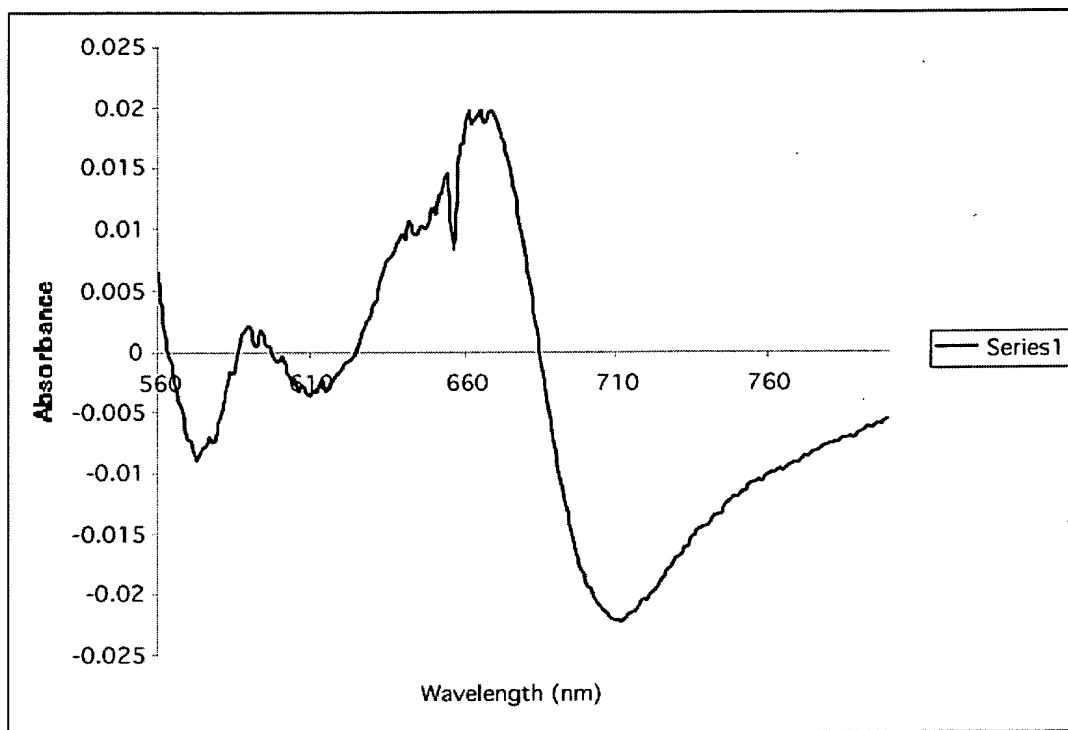
**Fig. 12**



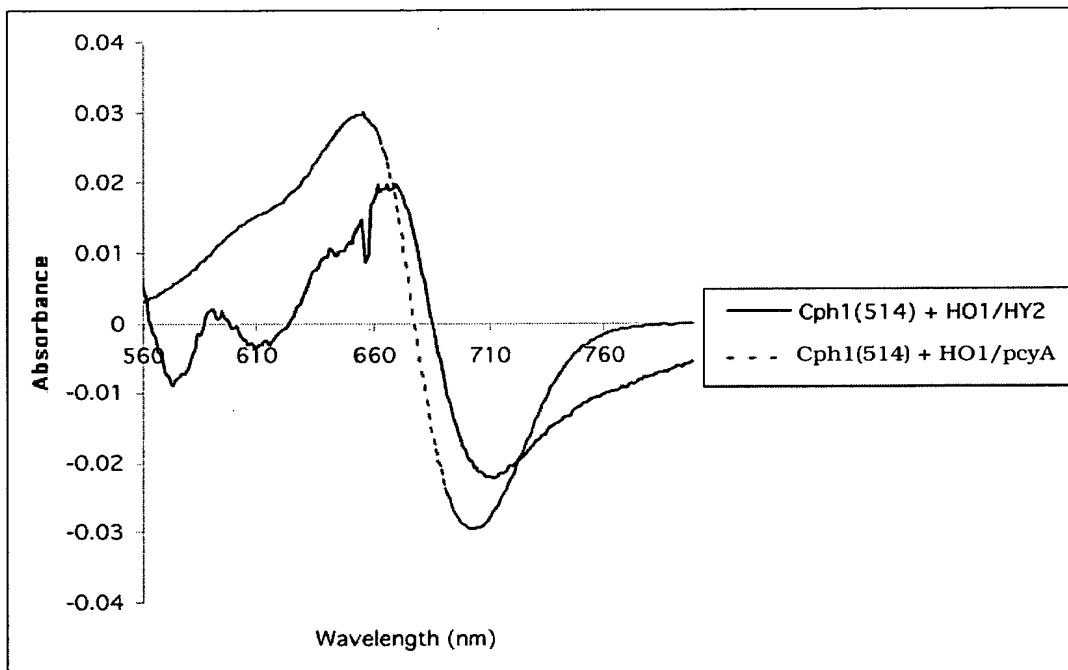
**Fig. 13A and 13B**



**Fig. 14**



**Fig. 15**



**Fig. 16**